

**ABSTRACT OF THE DISCLOSURE**

The invention relates to an apparatus and a method for accessing memories having a time-variant response over a PCI bus by using two-stage DMA transfers. The invention provides a method for executing a read request over a PCI bus by transferring the requested data from a main memory of a PCI card to a device located on the PCI bus, comprising the steps of obtaining an access request from a read access queue, transferring, by a first DMA transfer, the requested data from the main memory to a buffer memory on the PCI card, and transferring, by a second DMA transfer, the data from the buffer memory to the device.